

**REMARKS**

Applicants have amended the Specification to correct typographical errors.

Applicants have amended Claims 1, 16, 17, 19, 26, 36, 41, 42 and 44. Support for the amendments to the claims may be found for example, in the originally filed Claims and on page 3 of the Specification. Claims 19, 36 and 44 have been amended to correct their respective dependencies. Claims 18 and 43 are canceled without prejudice. Applicants reserve the right to pursue the canceled Claims in related applications.

Applicants submit that no new matter is presented by these amendments and respectfully request entry of the same. By these amendments, Applicants do not acquiesce to the propriety of any of the Examiner's rejections and do not disclaim any subject matter to which they are entitled.

***Objections to the Specification are Obviated***

Applicants have amended pages 2, 4, 5-6, 10, 14, 18-19 and 20-21 of the Specification to remove blanks, hyperlinks and correct other typographical errors.

***Claim Rejections under 35 U.S.C. §101 should be Withdrawn***

The Examiner has rejected Claims 1-12 and 16-24 under 35 U.S.C. §101 for allegedly being directed to non-statutory subject matter.

Specifically, the Office Action alleges that the steps recited in the methods of Claims 1-12 are limited to data manipulation and do not result in a useful, concrete and tangible result. Applicants respectfully disagree with the Office Action but solely to expedite the issuance of the present Claims, have amended Claim 1 to recite "a computer-implemented method" in the preamble. Support for the amendments to Claim 1 may be

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found for example, on pages 2 and 3 of the Specification as well as on pages 18 and 19 of the Specification (under the section heading "Genomic Alignment and Assessment of Sequence Clusters"). Applicants respectfully submit that amended Claim 1 is a statutory process limited to a practical application in the technological arts and is also directed to manipulation of data representing physical objects (e.g. transcript sequences). Thus the computer-implemented method of amended Claim 1 produces a concrete, tangible and useful result (*State Street*, 149 F.3d at 1373) and is thereby directed to statutory subject matter.

With regard to Claims 16-24, the Office Action alleges that steps of the method recited by the claims are limited to data manipulation and allegedly do not result in a tangible, concrete and useful result. Applicants respectfully disagree with the Office Action since the method is directed to designing a nucleic acid probe array. However, solely to expedite the issuance of the present Claims, Applicants have amended Claim 16 to recite "a computer-implemented method" in the preamble and "selecting probes....*to design the nucleic acid probe array*" in the body of the Claim. Moreover, Applicants wish to clarify that the modified cluster (against which the selected probes are targeted) has a tangible, concrete and useful application because it comprises transcripts that represent the same gene with potential false positive sequences having been filtered out (page 18 of the Specification).

In summary, in view of the above remarks and amendments, Applicants respectfully submit that the rejection of Claims 1-12 and 16-24 under 35 U.S.C. §101 should be withdrawn.

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***Claim Rejections under 35 U.S.C. §112, First Paragraph, should be Withdrawn***

The Examiner has rejected Claims 1-12, 16-24, 26-37 and 41-49 under 35 U.S.C. §112, first paragraph, for allegedly lacking enablement. Applicants respectfully disagree with the Office Action.

Regarding Claims 1-12, Applicants submit that ample guidance is provided in the Specification for one of skill in the art to practice the method of the Claims. The Examiner's attention is directed to Figure 4 and to pages 18-21 of the Specification which explain the criteria for modifying transcript clusters based on the quality of their alignment to the genome (see particularly page 20 of the Specification). However, solely to expedite the issuance of the present Claims, Applicants have amended Claim 1 to more particularly point out the present invention. In view of this, Applicants respectfully submit that the rejection of Claims 1-12 be withdrawn.

The Examiner has also rejected Claims 16-24 for allegedly failing to provide sufficient positive, active steps to practice the method. Applicants respectfully disagree, but solely to expedite the issuance of the present Claims, have amended Claim 16 to more clearly point out the present invention. The Examiner's attention is again directed to pages 18-21 of the Specification and to Figure 4, which explain ways to determine whether the clusters need to be modified and the types of modification to make. Applicants also submit that the Claims are directed to a method for designing a nucleic acid probe array, which provides a real world application. Thus the rejection of Claims 16-24 should be withdrawn.

The Examiner has further rejected Claims 26-37 and 41-49 for allegedly failing to provide sufficient, positive, active steps to practice the methods. Applicants respectfully disagree with the Examiner and reiterate the arguments above. In addition, solely to

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expedite the issuance of the present Claims, Applicants have amended Claims 26 and 41 to more clearly point out the present invention.

In summary, Applicants respectfully submit that in view of the above remarks and amendments, the rejection of Claims 1-12, 16-24, 26-37 and 41-49 under 35 U.S.C. §112, first paragraph, should be withdrawn.

*Claim Rejections under 35 U.S.C. §112, Second Paragraph, should be Withdrawn*

The Examiner has rejected Claims 1-12, 16-24, 26-37 and 41-49 under 35 U.S.C. §112, second paragraph, for allegedly failing to particularly point out and distinctly claim the subject matter of the invention. Applicants respectfully disagree with the Office Action.

Regarding Claim 1, Applicants submit that it would be clear to one of skill in the art that transcript sequences (for example, ESTs) are assembled by clustering (see also page 18 of the Specification), making superfluous the requirement of "clustering sequences" in the body of the Claim.

Applicants have also amended Claims 1 and 26 to more particularly point out the subject matter of the invention and submit that the metes and bounds of "modifying" would be evident to one of skill in the art (from page 20 of the Specification, for example).

The Examiner has rejected Claims 7 and 32 for allegedly being confusing. Applicants respectfully disagree and wish to clarify that Claim 7 depends upon Claims 4 or 5 and not Claim 2 as noted by the Examiner. Moreover, Claim 2 indicates that finding a chimeric cluster could provide a determinant of the quality of the transcript clusters. Claim 7 is directed to a method of iteratively aligning sub-clusters within the clusters to

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the genomic sequence, the stated goal for which is set forth in Claim 8. Thus Claims 1-6 provide ample guidance for the method of Claim 7.

Regarding Claim 16, Applicants have amended the body of the Claim to recite the stated goal of the preamble (that of designing a nucleic acid probe array) therein. Applicants submit that amended Claim 16 sets forth the positive, active steps of the claimed method and that the metes and bounds of "modifying" would be evident to one of ordinary skill in the art, particularly in light of page 20 of the Specification.

The Examiner has rejected Claims 17 and 42 for allegedly lacking antecedent basis. Applicants have amended Claims 17 and 42 to include the limitations of Claims 18 and 43 and to provide the necessary antecedent basis for "chimeric clusters." Applicants also wish to clarify that the classification of a cluster is a positive active step of the method.

The Examiner has rejected Claim 36 for allegedly being confusing in being dependent upon non-elected Claim 25. Applicants have amended Claim 36 to make it dependent upon Claim 35.

The Examiner has rejected Claims 26 and 41 for allegedly being confusing in reciting "performing the method comprising" without stating the intended goal of the method. Applicants have amended Claims 26 and 41 to more particularly point out the goal of the method.

In summary, Applicants respectfully submit that in view of the above remarks and amendments, the rejection of Claims 1-12, 16-24, 26-37 and 41-49 under 35 U.S.C. §112, second paragraph, should be withdrawn.

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### CONCLUSION

For these reasons, Applicants believe the application is now in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 731-5000.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account 01-0431.

If the Examiner has any questions pertaining to this application, the Examiner is requested to contact the undersigned agent.

Respectfully submitted,



Priyadarshini Rath  
Limited Recognition under 37 CFR 10.9(b)

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